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Frans Leenhouts

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LIU & LIU

444 S. FLOWER STREET, SUITE 1750

LOS ANGELES, CA 90071

EXAMINER

NGUYEN, LAUREN

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,104	Applicant(s) LEENHOUTS ET AL.	
	Examiner LAUREN NGUYEN	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 02/06/2009 have been fully considered but they are not persuasive.
2. The applicant argues (see pages 6-8) that in the **Sekiguchi** reference, a retardation 24 is between the white diffusion film 22 and the polarizing film 21. The examiner respectfully disagrees. Since **Onishi et al. as modified by Akiyama et al.** teaches a super-twist nematic LCD device including a front optical stack comprising one or more optical films, wherein the front optical stack consists essentially of a polarizer (12) and an optical light scattering film (17); the examiner merely relies on **Sekiguchi** for the teaching of the light scattering film (22) being disposed between the polarizer (21) and the front substrate (1). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the position of the scattering film as taught by **Sekiguchi** because such modification would improve the display characteristics (at least column 25, lines 20-35).
3. The claim language therefore does not patentably distinguish over the applied reference[s], and the previous rejections are maintained.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. **Claim 1-3, 8-13, and 18-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Onishi et al. (US 6,388,146)** in view of **Akiyama et al. (US 6,577,360)**; further in view of **Sekiguchi (US 6,738,112)**.

6. Regarding **claim 1**, **Onishi et al.** discloses a super-twist nematic LCD device (see at least column 18, lines 40-65) for multiplex operation, comprising a liquid crystal cell essentially comprising a liquid crystal layer, being sandwiched between a front and a rear substrate. **Onishi et al.** is silent regarding forming the remaining limitations of **claim 1**.

7. However, **Onishi et al.** (in at least column 18, lines 40-65) teaches the retardation of said liquid crystal layer being in the range of 500-750 nm (300-650 nm). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the retardation of the liquid crystal layer of the retardation of said liquid crystal layer being in the range of 500-750 nm with the teaching of **Onishi et al.** because such modification would increase the viewing angle and achieve a brighter display. In addition, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 2131.05.

8. In addition, **Akiyama et al.** (figures 3 and 9) discloses an at least partly reflective film (15), arranged in proximity to said rear substrate; and a front optical stack (12 and 17), arranged on a viewer's side of the front substrate, the stack comprising one or more optical films, wherein the front optical stack consists essentially of a polarizer (12) and an optical light scattering film (17).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the front optical stack and the reflective film as taught by **Akiyama et al.** because such modification would improve the angle of visibility and achieve a display image with whiter and softer tones.

9. **Onishi et al. as modified by Akiyama et al.** does not disclose the light scattering film being disposed between the polarizer and the front substrate. **Sekiguchi** (in at least column 25, lines 20-35; figure 23) teaches the light scattering film (22) being disposed between the polarizer (21) and the front substrate (1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the position of the scattering film as taught by **Sekiguchi** because such modification would improve the display characteristics.

10. Regarding **claim 2, Onishi et al.** (in at least column 18, lines 40-65) discloses the retardation of said liquid crystal layer being in the range of 500 to less than 700 nm (300-650 nm).

11. Regarding **claim 3, Akiyama et al.** (figures 3 and 9) discloses said at least partly reflective film is a reflective film (15) enabling reflective operation of the display device.

12. Regarding **claim 8, Akiyama et al.** (figures 3 and 9) discloses said at least partly reflective film (15) is arranged in said rear optical stack (14, 15, and 16), essentially adjacent to said rear substrate.

13. Regarding **claim 9, Akiyama et al.** (figures 3 and 9) discloses the front optical stack includes only the polarizer (12) and the optical light scattering film (17, figure 9).

14. Regarding **claim 10, Akiyama et al.** (figures 3 and 9) discloses the front optical stack does not include a compensation film (figure 9).

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15. Regarding **claim 11**, **Onishi et al.** discloses a liquid crystal display device, comprising a first substrate, a second substrate, a liquid crystal layer disposed between the first substrate and the second substrate. **Onishi et al.** is silent regarding forming the remaining limitations of **claim 1**.

16. However, **Onishi et al.** (in at least column 18, lines 40-65) teaches the retardation of said liquid crystal layer being in the range of 500-750 nm (300-650 nm). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the retardation of the liquid crystal layer of the retardation of said liquid crystal layer being in the range of 500-750 nm with the teaching of **Onishi et al.** because such modification would increase the viewing angle and achieve a brighter display. In addition, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 2131.05.

17. In addition, **Akiyama et al.** (figures 3 and 9) discloses an at least partly reflective film (15), supported by the second substrate; and a first optical stack (12 and 17) supported by the second substrate, comprising a polarizer (12) and an optical light scattering film (17), without a compensation film. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the front optical stack and the reflective film as taught by **Akiyama et al.** because such modification would improve the angle of visibility and achieve a display image with whiter and softer tones.

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18. **Onishi et al. as modified by Akiyama et al.** does not disclose the light scattering film being disposed between the polarizer and the first substrate. **Sekiguchi** (in at least column 25, lines 20-35; figure 23) teaches the light scattering film (22) being disposed between the polarizer (21) and the first substrate (1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the position of the scattering film as taught by **Sekiguchi** because such modification would improve the display characteristics.

19. Regarding **claim 12, Onishi et al.** (in at least column 18, lines 40-65) teaches the retardation of said liquid crystal layer being in the range of 500-750 nm (300-650 nm).

20. Regarding **claim 13, Akiyama et al.** (figures 3 and 9) discloses said at least partly reflective film is a reflective film (15) enabling reflective operation of the display device.

21. Regarding **claim 18, Akiyama et al.** (figures 3 and 9) discloses said at least partly reflective film (15) is supported by the second substrate (2) on a side facing away from the first substrate (1).

22. Regarding **claim 19, Akiyama et al.** (figures 3 and 9) discloses the front optical stack includes only the polarizer (12) and the optical light scattering film (17, figure 9).

23. **Claims 4-5, 7, 14-15, 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Onishi et al.** in view of **Akiyama et al.** and **Sekiguchi**; further in view of **Kubo et al. (US 6,124,919)**.

24. Regarding **claim 4, Onishi et al.** in view of **Akiyama et al.** and **Sekiguchi** discloses the limitations as shown in the rejection of **claim 1** above. **Onishi et al.** in view of **Akiyama et al.** and **Sekiguchi** does not disclose said at least partly reflective film is a transfective film enabling transfective operation of the display device. **Kubo et al.** (figures 1, 3 and 7(a)-7(b); in at least column 10, lines 43-51) discloses said at least partly reflective film (2) is a transfective film

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enabling transflective operation of the display device. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the light reflecting film as taught by **Kubo et al.** because such modification would enhance the brightness and obtain the image display having high contrast.

25. Regarding **claim 5, Akiyama et al.** (figures 3 and 9) discloses a rear optical stack, arranged on a back side of the liquid crystal layer, the stack comprising one or more optical films (14-16).

26. Regarding **claim 7, Kubo et al.** (as shown in figures 1, 3 and 7(a)-7(b)) discloses said at least partly reflective film (2) is arranged as an in-cell internal reflector between said front and rear substrate (1 and 2).

27. Regarding **claim 14, Onishi et al.** in view of **Akiyama et al.** and **Sekiguchi** discloses the limitations as shown in the rejection of **claim 11** above. **Onishi et al.** in view of **Akiyama et al.** and **Sekiguchi** does not disclose said at least partly reflective film comprises a transflective film enabling transflective operation of the display device. **Kubo et al.** (figures 1, 3 and 7(a)-7(b); in at least column 10, lines 43-51) discloses said at least partly reflective film (2) comprises a transflective film enabling transflective operation of the display device. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the light reflecting film as taught by **Kubo et al.** because such modification would enhance the brightness and obtain the image display having high contrast.

28. Regarding **claim 15, Akiyama et al.** (figures 3 and 9) discloses a second optical stack supported by the second substrate, comprising one or more optical films (14-16).

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29. Regarding **claim 17, Kubo et al.** (as shown in figures 1, 3 and 7(a)-7(b)) discloses said at least partly reflective film (2) is supported by the second substrate on a side facing the first substrate (1 and 2).

30. **Claims 6, 16, and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Onishi et al.** in view of **Akiyama et al., Sekiguchi and Kubo et al.**; (or **Onishi et al.** in view of **Akiyama et al. and Sekiguchi**), further in view of **Maruyama et al. (US 2002/0093612)**.

31. Regarding **claim 6**, as applied to **claim 5** above, **Onishi et al.** in view of **Akiyama et al., Sekiguchi and Kubo et al.** discloses said rear optical stack comprises a rear polarizer (14). **Onishi et al.** in view of **Akiyama et al., Sekiguchi and Kubo et al.** does not disclose a compensation film being arranged between the rear polarizer and the liquid crystal cell. **Maruyama et al.** (figure 12; in at least paragraph 0064) teaches a compensation film (44) being arranged between the rear polarizer and the liquid crystal cell (43 and 42b). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the rear optical stack as taught by **Maruyama et al.** because such modification would suppress the bright block image and enhance the contrast of the display.

32. Regarding **claim 16, Onishi et al.** in view of **Akiyama et al., Sekiguchi and Kubo et al.** discloses said rear optical stack comprises a rear polarizer (14). **Onishi et al.** in view of **Akiyama et al., Sekiguchi and Kubo et al.** does not disclose a compensation film. **Maruyama et al.** (figure 12; in at least paragraph 0064) teaches a compensation film (44). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the rear optical stack as taught by **Maruyama et al.** because such modification would suppress the bright block image and enhance the contrast of the display.

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33. Regarding **claim 1**, **Onishi et al.** discloses a super-twist nematic LCD device (see at least column 18, lines 40-65) for multiplex operation, comprising a liquid crystal cell essentially comprising a liquid crystal layer, being sandwiched between a front and a rear substrate. **Onishi et al.** is silent regarding forming the remaining limitations of **claim 1**.

34. However, **Onishi et al.** (in at least column 18, lines 40-65) teaches the retardation of said liquid crystal layer being in the range of 500-750 nm (300-650 nm). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the retardation of the liquid crystal layer of the retardation of said liquid crystal layer being in the range of 500-750 nm with the teaching of **Onishi et al.** because such modification would increase the viewing angle and achieve a brighter display. In addition, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 2131.05.

35. In addition, **Akiyama et al.** (figures 3 and 9) discloses an at least partly reflective film (15), arranged in proximity to said rear substrate; and a front optical stack (12 and 17), arranged on a viewer's side of the front substrate, the stack comprising one or more optical films, wherein the front optical stack consists essentially of a polarizer (12) and an optical light scattering film (17). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the front optical stack and the reflective film as taught by **Akiyama et al.** because such

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modification would improve the angle of visibility and achieve a display image with whiter and softer tones.

36. **Onishi et al. as modified by Akiyama et al.** does not disclose the light scattering film being disposed between the polarizer and the front substrate. **Sekiguchi** (in at least column 25, lines 20-35; figure 23) teaches the light scattering film (22) being disposed between the polarizer (21) and the front substrate (1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the position of the scattering film as taught by **Sekiguchi** because such modification would improve the display characteristics.

37. Regarding **claim 20**, **Onishi et al.** discloses a liquid crystal display device, comprising a first substrate, a second substrate, a liquid crystal layer disposed between the first substrate and the second substrate. **Onishi et al.** is silent regarding forming the remaining limitations of **claim 1**.

38. However, **Onishi et al.** (in at least column 18, lines 40-65) teaches the retardation of said liquid crystal layer being in the range of 500-750 nm (300-650 nm). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the retardation of the liquid crystal layer of the retardation of said liquid crystal layer being in the range of 500-750 nm with the teaching of **Onishi et al.** because such modification would increase the viewing angle and achieve a brighter display. In addition, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 2131.05.

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39. In addition, **Akiyama et al.** (figures 3 and 9) discloses an at least partly reflective film (15), supported by the second substrate on a side facing the first substrate or facing away from the first substrate; and an optical stack (12 and 17) supported by the first substrate, comprising a polarizer (12) and an optical light scattering film (17), without further compensation film. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the front optical stack and the reflective film as taught by **Akiyama et al.** because such modification would improve the angle of visibility and achieve a display image with whiter and softer tones.

40. **Onishi et al. as modified by Akiyama et al.** does not disclose the light scattering film being disposed between the polarizer and the first substrate. **Sekiguchi** (in at least column 25, lines 20-35; figure 23) teaches the light scattering film (22) being disposed between the polarizer (21) and the first substrate (1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the position of the scattering film as taught by **Sekiguchi** because such modification would improve the display characteristics.

41. **Maruyama et al.** (figure 12; in at least paragraph 0064) further teaches a single compensation film (44) supported by the second substrate. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the rear optical stack of as taught by **Maruyama et al.** because such modification would suppress the bright block image and enhance the contrast of the display.

Conclusion

42. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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43. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lauren Nguyen whose telephone number is (571) 270-1428. The examiner can normally be reached on M-Th, 7:30-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/L. N./

Examiner, Art Unit 2871

/Andrew Schechter/

Primary Examiner, Art Unit 2871